

# STRATEGIC BUSINESS PLAN (SBP)

## Clause 2.1.2 of the ISO/IEC Directives, Part 1



### ISO/TC 274

Light and lighting

Secretariat:

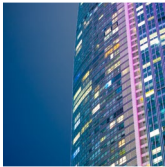
#### What is the main market trend?

Integration of lighting systems with building systems, and a growing emphasis on integrative lighting design that considers individual human needs and ecological demands.



#### What benefits can standards bring?

Support and promote the application of light and lighting worldwide, providing tools to all stakeholders to assure lighting functionality, quality, safety, and energy performance.



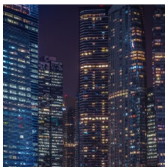
#### Who participates in standards development in this topic?

ISO/TC 274 maintains a strong cooperation with the International Commission on Illumination (CIE) including joint development of ISO/CIE standards.



#### What are the committee's strategic priorities in the next years?

ISO/TC 274 aims to work on standards for daylight integration and enhance energy performance metrics to promote sustainable lighting solutions.



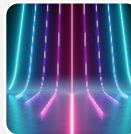
#### How can you get involved?

Speak with your national standards body or one of the extensive range of international-level liaisons to ISO/TC 274.



#### Message from the Chair, Mr Peter Thorns

*Lighting is a ubiquitous technology we all take for granted, yet it plays an important part in our lives and society. In its work ISO/TC 274 aims to ensure best practice in creating safe and good places for us in all aspects of our lives. This Strategic Business Plan shows our goals for this work and we invite you to join us in our work in Light and Lighting.*



#### About ISO/TC 274

- Scope →
- Participating members →
- Liaisons →
- Committee website →



#### High-profile standards

- ISO/CIE 20086:2019 →
- ISO/CIE 8995 series →
- Access the full ISO/TC 274 work programme →



#### About ISO

- ISO 2030 Strategy →
- ISO/IEC Directives, Part 1 →

## ISO's role in supporting the SDGs

ISO/TC 274 standards support the following SDGs



## Introduction

The evolution of formal strategic planning in ISO Technical Committees is a key measure in supporting the ISO 2030 Strategy vision of making lives easier, safer and better. This document is designed to aid committees and their stakeholders in:

- Identifying benefits and vision of standardization within the committee's field of activity
- Linking benefits to higher strategic imperatives (ISO 2030 Strategy, SDGs, London Declaration Action Plan)
- Prioritizing among projects and allocating resources
- Providing transparency and communicating through a format adapted to three key audiences (general public, TMB and other TCs, and internal TC stakeholders)
- Supporting data-driven continuous improvement, including user perspectives where available
- Maintaining strategic flexibility for different market cadences

International standards embody the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in ISO Technical committees, representative of all interested parties, supported by a WTO TBT-compliant public enquiry phase.

International standards are developed through a member-driven market-centric process, where any P- member may submit a proposal for new work.

This document represents an important filter through which new work items should be considered by P-members of a committee and shall be referenced in new work item proposals submitted to the committee per clause 2.3.4 of the ISO/IEC Directives, Part 1.

**Beginning in 2026, deviations from this strategy shall be rationalized in new work item proposals.**

## Meeting global needs

**To realize our vision, we must develop consensus-based standards that are relevant and respond to current and future challenges. We must focus on getting the right standards to market at the right time, and with the right content and in the right format.**



**Business environment and future trends**

### Complementary Work

According to its scope ISO/TC 274 is responsible for "Standardization in the field of application of lighting in specific cases complementary to the work items of the International Commission on Illumination (CIE) and the coordination of drafts from the CIE, in accordance with Council Resolution 19/1984 and Council Resolution 10/1989 concerning vision, photometry and colorimetry, involving natural and man-made radiation over the ultraviolet, visible, and infrared regions of the spectrum, and application subjects covering all usage of light, indoors and outdoors, energy performance, including environmental, and non-visual biological and health effects and lighting related information modelling systems".

ISO/TC 274 has a special role in the framework of co-operation between ISO and CIE, which is based on a Partner Standards Developing Organization (PSDO) agreement between the organizations. This role allows the joint development of ISO/CIE dual logo standards in ISO/TC 274 and CIE on equal terms. The specific rules for the collaboration are laid down in an Implementation Guide. (The organizational documents are publicly available [here](#).)

With the focus on the application of light and lighting, the work of ISO/TC 274 complements the work of the CIE, which develops the fundamental and basic standards, and of IEC committees, which develop standards for the electrical and electronic requirements of lighting products and lighting systems.

### Business environment in the industry sector and trends

Evolution of lighting application has been driven by factors including technology innovation and requirements for upgrades/renovation, which has to be incorporated into the standards/publications within the ISO area of work.

## Technology Innovation

LED lighting is the dominant electrical lighting technology on the market. It can offer improved lighting quality with positive effects on human performance, both visually and non-visually, while providing substantial cost and energy saving opportunities. It also creates new opportunities for driving innovation of lighting application with the integration of emerging technologies such as IoT, Information Technology, BIM, AI, etc. From the technology supply side, there will be several future trends to be considered within ISO/TC 274:

- **Lighting smartness.** With the enhanced controllability of LED technology, lighting systems are becoming increasingly digitalized, connected and interactive. This brings new opportunities in the ongoing drive to save energy and facilitates more demanding and flexible lighting for well-being, but also presents us with new challenges for application standards. The emerging trend for digital transformation of lighting with BIM and AI will also need to be considered in future standardization.
- **Integration.** With the inherent flexibility of LED technology, LED lighting can be easily integrated with building elements and components. With network technology, lighting systems can be integrated with other building systems and smart city systems. These possibilities provide lighting designers with many more choices for an innovative lighting environment, but also require new standards for lighting application.
- **Spectral Tuning.** With the emergence of multi-channel LED-based lighting systems, spectral tuning is now realizable as opposed to traditional fixed spectrum solutions, such as fluorescent lamps. This provides possibilities for integrative lighting solutions. Nevertheless, the new technology also raises challenges regarding design and performance assessment of lighting systems, such as improved colour metrics for lighting application, which also need defining via standardization.

## Integrative lighting

Growing scientific insights such as ipRGC-influenced responses to light provide us new perspectives for lighting application, such as the impact of light on human factors like well-being, activity, alertness, performance, sleep quality, health, etc., leading to requirements for lighting design that meet the visual, biological, and emotional needs of humans simultaneously. A holistic understanding of integrative lighting harmonized with the environment requires adequate and proper light on top of the requirements for human visual needs. This will be a driver for more demanding and flexible lighting designs. This will require a review of visual-task-oriented application standards as well as the creation of new standards defining the assessment of and lighting requirements for non-visual effects on humans.

## Ageing population

According to the statistics of the WHO, the population of the world is rapidly ageing: the number of people aged 60 and over as a proportion of the global population will double from 11% in 2006 to 22% by 2050. Visual capabilities reduce with age, the deterioration accelerating beyond the age of 40 years. This trend towards an ageing population and postponed retirement implies the need for lighting standards alleviating the impact of age on the human visual capabilities with more inclusive lighting solutions.

## Climate Change

Climate change is a gradual change in global temperatures and weather patterns, with increasing frequency of extreme weather events. The United Nations Framework Convention on Climate Change (UNFCCC) was established to stabilise the amount of greenhouse gas in the atmosphere. According to the UNEP report “The rapid transition to energy efficient lighting: an integrated policy approach”, electricity for lighting accounts for almost 20% of electricity consumption and 6% of CO<sub>2</sub> emissions worldwide. If not addressed immediately, global energy consumption for lighting will continue to grow. The energy consumption and environmental aspects of lighting are more and more a matter of directives and regulations. A more holistic systems approach is needed both within the lighting sector and between different ISO/TCs working on energy performance of buildings, the latter meaning energy performance of lighting systems in buildings including control methodologies and the use of daylight (ISO/TC 163 and ISO/TC 205).

### **Circular economy and life cycle cost**

The circular economy can help minimize carbon emissions and the consumption of raw materials, opening up new market prospects, and is a part of the effort to reduce the potential impact to the environment of existing life-cycle practices. ISO has already established ISO/TC 323 “Circular economy”, and standards can help in the classification and categorization of materials and processes. For light and lighting application, more holistic standards on cost and impacts to environment with cradle-to-cradle concepts should be developed.

### **Ecologically-friendly lighting**

Anthropogenic lighting at night is contributing to an increase in light pollution. The radiance of skyglow grew considerably for much of the 20th century as a result of population growth, expansion of settlements, improvement of lifestyle and some poor deployment of lighting technologies. While people require light at night, a significant proportion of the world's population live under light polluted skies and this number is increasing every year. As the only ISO/TC for light and lighting application, standards for ecologically-friendly lighting need to be developed while respecting the human need for light at night.

### **Horticultural lighting**

The fast growth of world population and effects of climate change contribute directly to the continuous increased global demand for food. The Food Agricultural Organization (FAO) of the United Nations estimates that in order to feed an increasingly larger population and achieve food security, food production must increase by 70 %. Horticultural lighting is considered one of the possible technical solutions for this, with the potential to provide sustainable food production inside urban areas independently from geographic location, weather conditions, and time of the year. This will be an emerging topic for the standardization activities of ISO/TC 274, supporting the development and application of horticultural lighting in a sustainable way.

The work of ISO/TC 274 complements national, regional and international standardization work for application of light and lighting related subject.

Standards developed by ISO/TC 274 are primarily intended to support and promote the application of light and lighting worldwide, providing tools to all stakeholders to assure lighting quality, safety, and energy performance. These international standards are important for scientific, engineering, and commercial purposes for the worldwide application of light and lighting.

The international lighting industry, as well as test houses and lighting designers, are active in many countries and it is important for them to find similar application standards everywhere. International standards make it possible to specify, install and use the same products and the same design in different countries, even allowing for different cultural habits. Additionally, such international standards are important to meet future challenges related to social, health, and environmental aspects.

One of the drivers for standardization is the need to make it possible for new entrants and the experienced alike to deliver lighting products that are fit for purpose. The newer entrants will benefit from good international standards by having one set of clearly-articulated requirements that will allow them a smooth entry into multiple markets. Established players will benefit from a level playing field. Consumers will benefit from better lighting solutions using advanced products, with standards aiding to avoid solutions that would not fulfil their expectations.

The diversity of the ISO/TC 274 work programme reflects and meets these demands, and all published standards and projects in development are relevant to the continuity of a healthy market. ISO/TC 274 is committed to the timely provision of its documents in order to fill gaps in standards development and facilitate harmonization of national or regional specifications and requirements in the field of light and lighting.



**Benefits of standards and vision for standardization in the field of activity**

Even more efficient international standardization in the field of light and lighting is established through the strong involvement of the International Commission on Illumination (CIE) which is a globally recognized International Standardization Body for light and lighting (ISO Council Resolution 19/1984 through ISO Council Resolution 10/1989) and has experts within national committee members from academia, industry and national metrology institutes worldwide. The CIE has a well-established structure for global cooperation in the field of vision, colour, photometry, application of light in interior and exterior lighting, as well as related areas of photobiology, photochemistry, and image technology. The CIE is also recognized as a Standards Developing Organization by the IEC and by the CIPM (International Committee for Weights and Measures).

ISO/TC 274 complements these already existing networks and supports the adoption of best practice in the process of standardization in this field.

In fact, the results of the international (scientific) cooperation within CIE spreads worldwide through the ISO system, whilst ISO also benefits from the activity of an internationally recognized body such as CIE in the field of light and lighting standardization. The overall result is an improved and enhanced knowledge transfer, at the industrial, commercial, and professional level, of many subjects such as enhancement of safety, visual performance, visual comfort and the aesthetical value of lighting, lighting measurement, and mitigation of related effects such as energy consumption, and environmental impacts, a consideration which cannot be neglected.

To summarize, the benefits that are gained are:

- timely provision of international documents (standards, technical specifications, etc.) in the field of light and lighting with cooperation and communication of experts from different countries and related stakeholders, to make the bridge between research output and market requirements,
- close cooperation with other ISO/TCs, CIE and IEC, to ensure effective coordination of the work items of these bodies, to avoid duplication of effort and conflicting standards, and to encourage the involvement in lighting standardization of experts from all stakeholders,
- harmonized standards through intensive cooperation with regional standardization bodies, e.g. CEN and CENELEC to remove technical barriers to trade and open markets in various regions of the world,
- involvement of national mirror committees in the voting procedures of ISO/CIE documents, to ensure that these documents are based on international consensus of involved NSBs.

The standards produced by ISO/TC 274 are mainly application standards and as such are used within industry, design and by governments to ensure safe visual environments.

Whilst ISO/TC 274 is still a relatively new committee its standards and documents are getting recognition and being incorporated into other documents. An example of this is the reference to ISO/TS 21274 *Light and lighting – Commissioning of lighting systems in buildings* in IEC 63116 ED1 *Lighting systems – General requirements*.

Other documents that have gained good acceptance are regarding energy performance requirements for lighting, ISO/CIE 20086:2019 *Light and lighting — Energy performance of lighting in buildings*, and ISO/TS 7127:2023 *Light and lighting — Building information modelling properties for lighting — Lighting systems*, whilst the standard on lighting for indoor workplaces, ISO/CIE 8995-1:2025 *Light and lighting — Lighting of work places — Part 1: Indoor*, that has been adopted in many countries for over 20 years has just been updated.

The current emergency lighting standard, ISO 30061:2007 *Emergency lighting*, dates from 2007 and work is starting to update this to define lighting that aids in the safe evacuation of buildings in the event of an emergency.

The close working relationship with CIE resulted in the technical report ISO/CIE TR 21783:2022 *Light and lighting — Integrative lighting — Non-visual effects* which has been well received.



### Reflections on current publications and their market impacts



### Sustainability and climate change

Addressing climate change and the sustainable use of resources are key issues on the global political and social agenda. Energy and resource efficiency, whilst still providing suitable environments for people to work, socialize and live within, are important challenges for governments, architects and designers.

Standards can contribute to the amelioration of these global issues and help in the path to net-zero practice in the built and outdoor environment. Lighting and the work of ISO/TC 274 can directly contribute to the achievement of a number of the UN 2030 Sustainable Development Goals (SDGs).

- Energy performance of buildings, supporting the use of energy efficient lighting systems and controls and permitting the impact on energy use of design choices to be calculated,
- The calculation of impact of daylight utilization in buildings, allowing improved building design, calculation of daylight impact within the built environment, and design of building technical systems to benefit from daylight availability,
- Commissioning of lighting systems, ensuring optimal and efficient operation of lighting and control systems, reducing energy use and promoting occupant wellbeing by ensuring systems operate as intended,
- BIM properties for lighting, allowing digital twins to predict and optimize the design and operation of lighting systems within the built and outdoor environments, helping ensure correct outcomes,
- Requirements for the lighting of workplaces, ensuring good lighting conditions that promote safety and productivity of building occupants in the workplace, whilst providing a visually comfortable work environment,
- The calculation of maintenance factors, preventing lighting systems from being over or under specified through life, resulting in either excessive energy use or inadequate illumination through life,
- Integrative lighting to promote building occupant wellbeing through lighting interventions. Controllability of lighting systems and of the spectral output of light sources provide opportunities to tune visual, biological, and emotional needs of humans simultaneously. This provides micro-benefits to an organization and macro-benefits to society through the improved wellbeing of people.

Further work within ISO/TC 274 will also consider;

- BSDF data generation for complex fenestration systems,
- Daylight calculation methodologies,
- The design of lighting systems, to correctly balance energy use, sustainability and functionality.

The close cooperation between ISO/TC 274 and CIE adds to the ability of ISO/TC 274 to cover a wider number of the UN SDG and disciplines within the field of lighting.

## All voices heard

We need to ensure that we attract and retain the best experts and enable everyone to participate. We must listen to all voices, both in the development of standards and when making decisions as an organization.



### Stakeholder mixture and engagement

An overview of countries participating in the work of ISO/TC 274 is available on [the committee's ISO website](#). Further involvement from national standards bodies from all over the globe is welcomed.

The standards are used by a wide range of people and organizations around the world, including Certification and Regulatory Bodies, Governments and NGOs, Educational and Research Institutions, Design and Construction Professionals, Product Specifiers, Businesses and Employers, Facility and Installation Services, End Users and Owners. These customers, actively represented in the field of the application of light and lighting, are represented through the national mirror committee structure supported by the involvement of interested bodies.

It is one of the major tasks of ISO/TC 274 to ensure that international standards are properly channelled through the National Standardization Bodies (NSBs). International standardization in the field of light and lighting is handled, on different levels, by other technical committees (e.g. CIE, ISO, and IEC), which could lead to duplication/overlap of work and which is often undertaken by the same collectives of experts.

The cooperation with CIE, based on a PSDO agreement, enables ISO/TC 274 to benefit from CIE's well-established structure, both by experts joining the ISO/TC 274 activities directly from CIE via the liaison as well as comments provided by CIE committees.



### Developing country perspectives

International standardization for lighting benefits developing countries by producing documents that ensure best practice for design, health and safety and energy efficiency. They allow common practice between developing and developed countries improving opportunities for bi-directional trade and knowledge transfer.

Current standards produced by ISO/TC 274 address the issues of lighting within the workplace for safety and comfort, and for energy efficient practice. This aids the development of good quality workplaces that promote productivity and wellbeing whilst respecting environmental issues.

ISO/TC 274 supports the participation of developing countries in its activities and supports new members to find their way through the procedures and formalities so that they can contribute their views.

# ISO Standards used everywhere

To encourage the widespread use of ISO standards and attract experts to the development process, we must clearly demonstrate the benefits of using ISO standards.

## CIE

A [Partner Standards Developing Organization \(PSDO\)](#) agreement between ISO and the CIE on technical cooperation has been in place since 2019, replacing the Memorandum of Understanding from 1986. This PSDO Agreement has the objectives to avoid duplication of work, to achieve the best possible input to the work and to express a concerted view to third parties.

An [Implementation Guide \(IG\)](#), annexed to the PSDO agreement, describes the working arrangement specific to the CIE and ISO/TC 274. This IG is updated at the occasion of the annual revision of the ISO Directives and/or CIE Code of Procedure, if necessary. In general, fundamental/application research as well as the development of basic and fundamental standards is typically a CIE-driven process. Standards development in applications perfectly fits into the ISO structure. Both processes are equally important and have to be carefully interlinked to meet the objectives of ISO/TC 274. Figure 1 shows the horizontal cooperation between ISO/TC 274 and CIE in the (overlapping) fields covered by their scopes.

Close cooperation is embodied by a joint advisory group (ISO/TC 274/JAG), which acts as a coordination committee between ISO/TC 274 and the CIE, provides recommendations on routes of cooperation for lighting related standardisation projects and provides a platform to discuss work items in overlapping areas with other standardization committees.



Figure 1. Visualization of the cooperation between ISO/TC 274 and CIE

## ISO/TCs, IEC/TCs and other international organizations

The most significant benefit of ISO/TC 274 is that “light and lighting” becomes integrated within the ISO system instead of spread (and potentially lost) within a variety of other ISO/TCs. Therefore, light and lighting application standardization becomes more structured and usable with a visible and correctly functioning chain from national to regional to international levels (and vice versa), allowing international standards to be produced and accepted at all levels.

To develop, maintain and optimize a set of coherent standards, ISO/TC 274 cooperates with CIE, IEC and other ISO committees which deal with light- and lighting-related work items or where light and lighting is being used in the respective product or specific applications.

Before ISO/TC 274 was established, other ISO committees developed light- or lighting-related standards. In some cases this practise still continues. Therefore, it is essential to strengthen the position and awareness of ISO/TC 274 as the committee responsible for light and lighting.

To achieve this, ISO/TC 274 has established numerous liaisons to other ISO committees (overview here), and a joint working group with ISO/TC 205 on the Indoor Visual Environment.

For cooperation with IEC, the most important liaison is with IEC/TC 34 "Lighting". To maintain this cooperation, IEC/TC 34 has permanent members in ISO/TC 274/JAG.

Further efforts are being made to identify relevant projects at an early stage, even without a liaison. ISO/TC 274/JAG is keeping an eye on such developments and invites delegates from other committees to its meetings to exchange information and find effective ways forward. As a result of its experience, ISO/TC 274 also works on ideas to generally improve coordination in ISO.

**Regional and national standardisation bodies**

In addition to existing ISO, CIE and IEC standards there is a broad variety of existing regional and national lighting standards. ISO/TC 274 aims to make use of the existing knowledge as a basis for its own standardization work.

A working cooperation with CEN/TC 169 "Light and lighting" is in place, including adoption of documents between CEN/TC 169 and ISO/TC 274.



**National  
adoption  
perspectives**

National adoption perspectives will be investigated by ISO/TC 274 for the next revision of the Strategic Business Plan.



**Conformity  
assessment**

Not applicable to ISO/TC 274.

## ISO/TC 274 Strategic Objectives

Objectives	Responsible SC or WG (if applicable)	Proposed actions	Priority
To consider developing a standard on daylight in lighting	AHG 1	To provide a recommendation for further action	Being worked on
To consider developing a standard on sports lighting	AHG 2	To prepare a WI proposal	Being worked on
To update established standards	-	To review ISO 30061/CIE S 020, ISO/CIE 8995-3 and CIE S 014	To be worked on
To integrate energy performance of lighting into the ISO 52000 standards family	JWG 1	To revise ISO/CIE 20086 and ISO 52007-series	To be worked on
To provide guidance on the use of maintenance factors within design practice	-	Revise ISO/CIE 22012:2019 with new knowledge from CIE	To be worked on upon the completion of the CIE work on this topic
To consider developing a document on Life Cycle costs of lighting applications	-	To gather interested experts and to prepare a WI proposal	To be worked on
To account for the ageing population to ensure inclusive lighting solutions.	-	To observe fundamental work in CIE	Not yet ready for work.
To address obtrusive light in standardisation.	-	To observe fundamental work in CIE	Not yet ready for work.

### Annex -

### Documents on the cooperation between ISO/TC 274 and CIE

The cooperation between ISO/TC 274 and the CIE is based on the following documents:

- ISO/CIE Partner Standards Developing Organization (PSDO) Agreement,
- ISO/CIE PSDO Agreement - Implementation Guide (IG) for ISO/TC 274 and CIE

Both are available as public material on [ISO/TC 274's webpage](#).